

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Actuator

with type designation(s)
MT50 1.0, MT150 1.0

Issued to

ELTORQUE AS
VANVIKAN, Norway

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
MT50 1.0	C	B	A	A	D
MT150 1.0	C	B	A	A	D

This Certificate is valid until **2020-12-13**.

Issued at **Høvik** on **2015-12-14**

DNV GL local station: **Trondheim**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

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Odd Magne Nesvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Place of manufacture

Eltorque AS
Verkstedvegen 4
7125 Vanvikan
Norway

Eltorque Automation (Xiamen) Co., Ltd.
5/7 Xinshidai building, No.1 Huli Da Dao, Huli District,
Xiamen, Fujian Province, Postcode: 361006
China

Product description

Electric multi-turn valve actuator
Power Supply: MT50, MT150 230 V AC 50 Hz
Operating Torque: MT50 Max. 50 Nm
MT150 Max. 150 Nm

Interface options as listed in table below.

Actuator	Interface boards
MT50 1.0	MT50 1.0 Digital MT50 1.0 CANopen
MT150 1.0	MT150 1.0 Digital MT150 1.0 CANopen

Firmware versions:

Interface type	MT50, MT150
CANopen (Fieldbus)	1.0.x
Digital (Open – Close)	1.0.x

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

- [I-1] User manual: MT50 & MT150 Electrical Multi-turn Valve Actuators, dated 2011-03-04
- [I-2] Drawing no. MT50.000.1 rev. 2: MT50 Main assembly
- [I-3] Drawing no. MT150.000.1 rev. 2: MT150 Main assembly
- [I-4] Drawing: Assembly ND50, ND80 & ND100 with MT50 Actuator, rev. 0
- [I-5] Drawing: Assembly ND125 & ND150 with MT150 Actuator, rev. 0
- [I-6] Nemko test report no. E12008.00, dated 2013-06-26 (MT50)
- [I-7] Nemko test report no. E12007.00, dated 2013-04-30 (MT150)
- [I-8] Nemko test report no. E15184.00, dated 2015-08-11 (MT50)

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015.
All actuators tested for IP68 down to 10 m for 72 h according to IEC 60529:2001.

Marking of product

- Actuator model name
- Interface type
- Manufacturer name
- Serial number
- Input power ratings

Job Id: **262.1-019053-1**
Certificate No: **TAA000006V**

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE